

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):

James Andrew Davis, et al.

RE: Request for Substitute
Papers

Serial No.: 09/915,194

Group Art Unit: 2811

Filed: July 25, 2001

Examiner: unknown

For: "ERROR CORRECTION CODING AND
DECODING IN A SOLID-STATE STORAGE
DEVICE"

Our Ref.: B-4257 618971-3

Date of this paper:

April 3, 2002

VIA FACSIMILE

1-703-872-9302 (TC3700)

42 PAGES

Box Duplicate TC3700
U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202-2327**RECEIVED**

SEP 18 2002

Technology Center 2100

Sir:

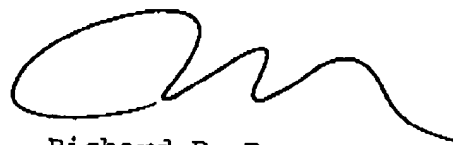
We acknowledge receipt of the Request for Substitute Papers dated 3/22/2002 (copy enclosed). The Request makes reference to papers filed on 9/25/2002. According to our records, no papers were filed on that date. In a spirit of cooperation, we enclose copies of papers filed on 11/8/2001. Please find enclosed a copy of the above-identified application papers, as follows:

- 1) the Request for Substitute Papers dated 3/22/2002
- 2) postcard for Completion of Filing Requirements
- 3) First Class Mail envelope for Completion of Filing Requirements
- 4) Transmittal letter for Completion of Filing Requirements with Certification under 37 CFR 1.10 dated 11/8/01 (2 pages)
- 5) Check no. 14146 in the amount of \$870.00
- 6) Notice to File Missing Parts of Non-Provisional Application
- 7) Declaration/Power signed by inventor James Andrew Davis (2 pages); Declaration/Power signed by inventor Jonathan Jedwab (2 pages); Declaration/Power signed by inventors David H. McIntyre, Kenneth K. Smith, and Stewart R. Wyatt (2 pages); Declaration/Power signed by inventor Kenneth Graham Paterson (2 pages); Declaration/Power signed by inventor Frederick A. Perner (2 pages); Declaration/Power signed by inventor Gadiel Seroussi (2 pages)

RE: Request for Substitute Papers
USSN 09/915,194
April 3, 2002
Page 2

- 8) Postcard for Assignment Recordation of one assignment
- 9) First Class Mail envelope for Assignment Recordation
- 10) Check no. 14147 in the amount of \$40.00
- 11) Recordation Form Cover Sheet with certificate of mailing (Conveying Parties: Hewlett-Packard Limited, Jonathan Jedwab, and Kenneth Graham Paterson; Receiving Party: Hewlett-Packard Company) (2 pages)
- 12) Assignment document from Hewlett-Packard Limited, Jonathan Jedwab, and Kenneth Graham Paterson to Hewlett-Packard Company (1 page)
- 13) Postcard for Assignment Recordation
- 14) First Class Mail envelope for Assignment Recordation
- 15) Check no. 14148 in the amount of \$40.00
- 16) Recordation Form Cover Sheet with certificate of mailing (Conveying Parties: James Andrew Davis, David H. McIntyre, Kenneth K. Smith, Stewart R. Wyatt, Frederick A. Perner, and Gadiel Seroussi; Receiving Party: Hewlett-Packard Company) (2 pages)
- 17) Assignment documents (12 pages)

Respectfully submitted,



Richard P. Berg
Attorney for Applicant
Reg. No. 28,145
LADAS & PARRY
5670 Wilshire Boulevard
Suite 2100
Los Angeles, CA 90036
Telephone: (323) 934-2300
Telefax: (323) 934-0202

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office (USPTO) on the date shown below. Specifically, this correspondence is being telefaxed to the USPTO at (703) 872-9302 (TC3700) on April 3, 2002.

Cheryl Liang





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

Application Number	Filing Date	First Named Applicant	Atty. Docket No.
09/915,194	07/25/2001	Davis, James	B-4257 618971-3

LADAS & PARRY
Suite 2100
5670 Wilshire Boulevard
Los Angeles CA 90036-5679

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SEP 18 2002

Technology Center 2100

MAR 28 2002

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L.A. OFFICE

Title: Error correction coding and decoding in a solid-state storage device

Date Mailed: 03/22/2002

Request for Substitute Papers

The papers filed on 02/25/02 are no longer in condition to become part of the permanent records of the United States Patent and Trademark Office (USPTO) for this application (37 CFR 1.52(a)) due to the United States Postal Service sanitization process.

The USPTO requests that applicant provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the above-identified papers (signing and returning a copy of this notice will provide such a statement). The reply to this letter should be submitted to the USPTO by facsimile at the number indicated 703-746-4060(OIPE).

Alternatively, the reply to this letter may be hand-carried to the Customer Service Window located in Room 1B03 of Crystal Plaza Building 2, Arlington, Virginia, 22202.

The USPTO strongly prefers that the reply to this letter be submitted by facsimile. However, if applicant cannot submit the reply to this letter by facsimile (or hand-delivery), the reply may be mailed to: Box Duplicate OIPE, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202-2327.

This letter is not a notice under 37 CFR 1.251. However, failure to timely replay to this notice within **two (2) weeks** of the date of receipt of this letter may result in the USPTO issuing a notice under 37 CFR 1.251. **A copy of this notice should be included with the reply.**

The enclosed papers are a complete and accurate copy of the above-identified papers.

Name: _____ Registration No.: _____

Signature: _____ Date: 4/3/02

To: USPD (kl)Our reference:
B-4257 618971-3FROM: COMMISSIONER OF PATENTS
AND TRADEMARKSDate mailed:
November 8, 2001THE PATENT AND TRADEMARK OFFICE
MAIL ROOM STAMP HEREON ACKNOWLEDGESRECEIPT OF: Completion of Filing RequirementsTransmittal Letter with Certificate of Mailing (2 pages)in response to Notice to File Missing Parts of Application; Copy of Notice to File
Missing Parts (1 page); Check No. 14146 in the amount of \$870.00 to cover filing
fee and surcharge; original Declaration/Power signed by inventor James Andrew Davis
(2 pages); original Declaration/Power signed by inventor Jonathan Jedwab (2 pages);
original Declaration/Power signed by inventors David H. McIntyre, Kenneth K. Smith,
and Stewart R. Wyatt (2 pages); original Declaration/Power signed by inventor
Kenneth Graham Paterson (2 pages); original Declaration/Power signed by inventor
Frederick A. Perner (2 pages); original Declaration/Power signed by inventor Gadriel
Seroussi (2 pages) and this postcard.

IN CONNECTION WITH:

James Andrew DAVIS, et al.

STAMP

FOR: "ERROR CORRECTION CODING AND
DECODING IN A SOLID-STATE STORAGE DEVICE"

SERIAL NUMBER: 09/915,194

FROM LADAS & PARRY - L. A. 13239340202

(WED) 4. 3'02 15:56/ST. 15:55/NO. 4800000311 P 5



★ ★ ★ ★ ★

U.S. POSTAGE

1730

PB5510413

0013 \$01.030 NOV 08 2001

1144 MAILED FROM ZIP CODE 90036

First Class Mail

LADAS & PARRY

5670 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90036
(323) 934-2300

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK
OFFICE

WASHINGTON, D.C.

ATTN: CUSTOMER SERVICE CENTER
INITIAL PATENT EXAMINATION DIVISION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):
 James Andrew DAVIS, et al.
 Serial No.: 09/915,194
 Filed: July 25, 2001
 For: "ERROR CORRECTION CODING AND
 DECODING IN A SOLID-STATE STORAGE
 DEVICE"

Group Art Unit: 2811
 Examiner: unknown
 Our Ref.: B-4257 618971-3

Date of this paper:

November 8, 2001

Commissioner for Patents
 United States Patent and Trademark Office
 Washington, D.C. 20231

Attn: Customer Service Center
 Initial Patent Examination Division

Sir:

COMPLETION OF FILING REQUIREMENTS

Responsive to office letter dated 09/10/2001 (copy attached).

DECLARATION OR OATH

- ☒ Please find enclosed the Declaration/Power signed by inventor James Andrew Davis.
- ☒ Please find enclosed the Declaration/Power signed by inventor Jonathan Jedwab.
- ☒ Please find enclosed the Declaration/Power signed by inventors David H. McIntyre, Kenneth K. Smith, and Stewart R. Wyatt.
- ☒ Please find enclosed the Declaration/Power signed by inventor Kenneth Graham Paterson.
- ☒ Please find enclosed the Declaration/Power signed by inventor Frederick A. Perner.
- ☒ Please find enclosed the Declaration/Power signed by inventor Gadiel Seroussi.

AMENDMENT OF CLAIMS

- ☐ Please cancel claims _____ inclusive
 - ☐ Please find enclosed an amendment deleting multiple dependencies
- NOTE: The filing fees, fees for and surcharge fees listed below are reduced by 50% where proof of a small entity status is established on or before the date the fee is paid. If the full fee is paid but a verified statement is filed within two months of the date of payment of the first fee then the excess fee paid will be refunded on request. Notice of January 20, 1983. 1027 TMOG 114.

FEES

- | | |
|--|-----------------|
| <input checked="" type="checkbox"/> Filing fee (37 CFR 1.16(a) - 740.00) | <u>\$740.00</u> |
| (small entity - 370.00) | |
| <input type="checkbox"/> Fees for claims | |
| <input type="checkbox"/> Independent claim in excess of 3 | |
| (37 CFR 1.16(b) - 84.00) | |
| (small entity - 42.00) | |
| <input type="checkbox"/> Claims in excess of 20 | |
| (37 CFR 1.16(c) - 18.00) | |
| (small entity - 9.00) | |

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the:

Commissioner for Patents
 United States Patent and Trademark Office
 Washington, D.C. 20231

Attn: Customer Service Center
 Initial Patent Examination Division

Date: November 8, 2001

Karyn Lao

(Typed or printed name of person mailing paper)

(Signature of person mailing paper)

Received from < 13239340202 > at 4/3/02 6:56:45 PM [Eastern Standard Time] Completion of Filing Requirements (Page 1 of 2)

- ☐ Multiple dependent claim(s)
(37 CFR 1.16(d) - 260.00)
(small entity - 130.00) _____
- ☒ Surcharge fees
- ☒ Late payment of filing fee
(37 CFR 1.16(e) - 130.00)
(small entity - 65.00) _____
- AND
- ☒ Late filing of declaration or oath
(37 CFR 1.16(e) - 130.00) \$130.00
(small entity - 65.00) _____
- ☐ Petition fee for filing by person not
the inventor (37 CFR 1.17(h) \$120.00) _____
- ☐ Recording assignment
(37 CFR 1.21(h)(i) 40.00) _____
- ☐ Attached is an assignment to _____

Total fees: \$870.00

SMALL ENTITY STATUS

- ☐ A verified statement that this filing is by a small entity is
- ☐ Attached ☐ Already filed on _____
W/cover sheet

PAYMENT OF FEES


- ☒ Enclosed is a check in the amount of \$870.00.
- ☐ Charge Account No. 12-0415 in the amount of _____.
A duplicate of this request is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 CFR 1.22(b).

AUTHORIZATION TO CHARGE ADDITIONAL FEES

- ☒ The Commissioner is hereby authorized to charge the following additional fees which may be required or credit any overpayment to Account No. 12-0415.
- ☒ 37 CFR 1.16 (filing fees and presentation of extra claims)
- ☒ 37 CFR 1.17 (application processing fees)
- ☐ 37 CFR 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 CFR 1.311(b)).

NOTE: 37 CFR 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application... prior to paying... issue fee."


Richard P. Berg
Attorney for the Applicant
Registration No.: 28,145

c/o LADAS & PARRY
5670 Wilshire Boulevard, Suite 2100
Los Angeles, California 90036-5679

Telephone No.: (323) 934-2300
Facsimile No.: (323) 934-0202

B-4257 618971-3

LADAS & PARRY		NO. 174146	
JAMES ARTHUR DAVIS JR.		AMOUNT	
USAN 1978-1-1-1		6870.00	
OFFICE OF THE SEC. OF ATTORNEY GEN.		DATE	
PAY TO THE ORDER OF		11/18/2001	
Commissioner of Revenue & Treasuries		LADAS & PARRY	
NEW YORK, NY 10023		LADAS & PARRY	
NEW YORK, NY 10023		LADAS & PARRY	

001146 021000089: 400 37933437



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/915,194	07/25/2001	James Andrew Davis	B-4257 618971-3

CONFIRMATION NO. 5298

FORMALITIES LETTER



OC00000006534579

LADAS & PARRY
Suite 2100
5670 Wilshire Boulevard
Los Angeles, CA 90036-5679

Date Mailed: 09/10/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$ 710 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- The oath or declaration is unsigned.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 840.

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**ATTORNEY DOCKET NO. 10012432 -1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

The specification of which is attached hereto unless the following box is checked:

(X) was filed on Jul 25, 2001 as US Application No. or PCT International Application
Number 09/915194 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

Foreign Application(s) and/or Claim of Foreign Priority

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or inventor(s) certificate listed below and have also identified below any foreign application for patent or inventor(s) certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES: _____ NO: _____
			YES: _____ NO: _____

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (patented/pending/abandoned)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer
Number Bar Code
Label hereSend Correspondence to:
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400**Direct Telephone Calls To:**Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew DavisCitizenship: USResidence: 2214 Grainmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature

Date

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)**ATTORNEY DOCKET NO. **10012432 -1**Full Name of # 2 joint inventor: Jonathan JedwabCitizenship: GBResidence: Flat 17 Parklands 27 Tyndalls Park Road Bristol, England BS8 1PQPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 3 joint inventor: David H. McIntyreCitizenship: USResidence: 13076 W Woodspring Street Boise, ID 83713Post Office Address: Same as Residence

Inventor's Signature _____

Date _____

Full Name of # 4 joint inventor: Kenneth Graham PatersonCitizenship: GBResidence: 12 Cotham Side Cotham, Bristol BS6 5TP Great BritainPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 5 joint inventor: Frederick A PernerCitizenship: USResidence: 3234 Ramona St. Palo Alto California 94306Post Office Address: Same As Residence

Inventor's Signature _____

Date _____

Full Name of # 6 joint inventor: Gadiel SeroussiCitizenship: USResidence: 1123 Milky Way Cupertino CA 95014Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 7 joint inventor: Kenneth K SmithCitizenship: USResidence: 11776 W Rader Dr Boise, ID 83713Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 8 joint inventor: Stewart R. WyattCitizenship: USResidence: 10476 Barnsdale Dr Boise, ID 83704Post Office Address: Same as residence

Inventor's Signature _____

Date _____

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**ATTORNEY DOCKET NO. 10012432 -1

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Error Correction Coding And Decoding In A Solid-State Storage Device

the specification of which is attached hereto unless the following box is checked:

(X) was filed on Jul 25, 2001 as US Application No. or PCT International Application
Number 09/915194 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

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			YES: _____ NO: _____
			YES: _____ NO: _____

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Customer Number 022879Place Customer
Number Bar Code
Label hereSend Correspondence to:
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Direct Telephone Calls To:

Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew DavisCitizenship: USResidence: 2214 Grainmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature

Date

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)**ATTORNEY DOCKET NO. **10012432 -1**Full Name of # 2 joint inventor: Jonathan JedwabCitizenship: GBResidence: Flat 17 Parklands 27 Tyndalls Park Road Bristol, England BS8 1PQPost Office Address: Same as residenceInventor's Signature *Jonathan Jedwab*Date 1 Oct 2001Full Name of # 3 joint inventor: David H. McIntyreCitizenship: USResidence: 13076 W Woodspring Street Boise, ID 83713Post Office Address: Same as Residence

Inventor's Signature _____

Date _____

Full Name of # 4 joint inventor: Kenneth Graham PatersonCitizenship: GBResidence: 12 Cotham Side Cotham, Bristol BS6 5TP Great BritainPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 5 joint inventor: Frederick A PernerCitizenship: USResidence: 3234 Ramona St. Palo Alto California 94306Post Office Address: Same As Residence

Inventor's Signature _____

Date _____

Full Name of # 6 joint inventor: Gadiel SeroussiCitizenship: USResidence: 1123 Milky Way Cupertino CA 95014Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 7 joint inventor: Kenneth K SmithCitizenship: USResidence: 11776 W Rader Dr Boise, ID 83713Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 8 joint inventor: Stewart R. WyattCitizenship: USResidence: 10476 Barnsdale Dr Boise, ID 83704Post Office Address: Same as residence

Inventor's Signature _____

Date _____

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**ATTORNEY DOCKET NO. 10012432-1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

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			YES NO
			YES NO

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILED DATE	STATUS (e.g., pending, granted, etc.)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer
Number Bar Code
Label hereSend Correspondence to:
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Direct Telephone Calls To:

Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew DavisCitizenship: USResidence: 2214 Grainmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature _____

Date _____

Rev 05/01 (DocPwr)

(Use Page Two For Additional Inventor(s) Signature(s))

Page 1 of 2

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)**ATTORNEY DOCKET NO. 10012432 -1Full Name of # 2 joint inventor: Jonathan JedwabCitizenship: GBResidence: Flat 17 Parklands 27 Tyndalls Park Road Bristol, England B58 1PQPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 3 joint inventor: David H. McIntyreCitizenship: USResidence: 13076 W Woodspring Street Boise, ID 83713Post Office Address: Same as ResidenceInventor's Signature Date 23 Oct 2001Full Name of # 4 joint inventor: Kenneth Graham PatersonCitizenship: GBResidence: 12 Cotham Side Cotham, Bristol BS6 5TP Great BritainPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 5 joint inventor: Frederick A PomerCitizenship: USResidence: 3234 Ramona St. Palo Alto California 94306Post Office Address: Same As Residence

Inventor's Signature _____

Date _____

Full Name of # 6 joint inventor: Gadriel SeroussiCitizenship: USResidence: 1423 Milky Way Cupertino CA 95014Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 7 joint inventor: Kenneth K SmithCitizenship: USResidence: 11776 W Rader Dr Boise, ID 83713Post Office Address: Same as residenceInventor's Signature Date 18 Oct '01Full Name of # 8 joint inventor: Stewart R. WyattCitizenship: USResidence: 10476 Barnsdale Dr Boise, ID 83704Post Office Address: Same as residenceInventor's Signature Date 22 Oct 2001

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**ATTORNEY DOCKET NO. 10012432 -1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

the specification of which is attached hereto unless the following box is checked:

(X) was filed on Jul 25, 2001 as US Application No. or PCT International Application
Number 09/915194 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

Foreign Application(s) and/or Claim of Foreign Priority

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or inventor(s) certificate listed below and have also identified below any foreign application for patent or inventor(s) certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES: _____ NO: _____
			YES: _____ NO: _____

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (patented/pending/abandoned)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer
Number Bar Code
Label here**Send Correspondence to:**HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400**Direct Telephone Calls To:**Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew DavisCitizenship: USResidence: 2214 Grainmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature _____

Date _____

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)**

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint inventor: Jonathan JedwabCitizenship: GB

Residence:

Flat 17 Parklands 27 Tyndalls Park Road Bristol, England BS8 1PQ

Post Office Address:

Same as residence

Inventor's Signature

Date

Full Name of # 3 joint inventor: David H. McIntyreCitizenship: US

Residence:

13076 W Woodspring Street Boise, ID 83713

Post Office Address:

Same as Residence

Inventor's Signature

Date

Full Name of # 4 joint inventor: Kenneth Graham PatersonCitizenship: GB

Residence:

12 Cotham Side Cotham, Bristol BS6 6TP Great Britain

Post Office Address:

Same as residence13 VICARAGE RD, TEDDINGTON, MIDDLESEX

Inventor's Signature

Date

20/2/2001TWILBEZ.Full Name of # 5 joint inventor: Frederick A PernerCitizenship: US

Residence:

3234 Ramona St. Palo Alto California 94306

Post Office Address:

Same As Residence

Inventor's Signature

Date

Full Name of # 6 joint inventor: Gadiel SeroussiCitizenship: US

Residence:

1123 Milky Way Cupertino CA 95014

Post Office Address:

Same as residence

Inventor's Signature

Date

Full Name of # 7 joint inventor: Kenneth K SmithCitizenship: US

Residence:

11776 W Rader Dr Boise, ID 83713

Post Office Address:

Same as residence

Inventor's Signature

Date

Full Name of # 8 joint inventor: Stewart R. WyattCitizenship: US

Residence:

10476 Barnsdale Dr Boise, ID 83704

Post Office Address:

Same as residence

Inventor's Signature

Date

PATENT APPLICATION

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATIONATTORNEY DOCKET NO. 10012432 .1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

The specification of which is attached hereto unless the following box is checked:

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COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES: _____ NO: _____
			YES: _____ NO: _____

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (patent or pending or abandoned)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer
Number Bar Code
Label hereSend Correspondence to:
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Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Direct Telephone Calls To:

Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew Davis Citizenship: USResidence: 2214 Grainmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature _____

Date _____

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 Joint Inventor: Jonathan Jedwab

Citizenship: GB

Residence: Flat 17 Parklands 27 Tyndalls Park Road Bristol, England BS8 1PQ

Post Office Address: Same as residence

Inventor's Signature

Date

Full Name of # 3 Joint Inventor: David H. McIntyre

Citizenship: US

Residence: 13076 W Woodspring Street Boise, ID 83713

Post Office Address: Same as Residence

Inventor's Signature

Date

Full Name of # 4 Joint Inventor: Kenneth Graham Paterson

Citizenship: GB

Residence: 12 Cotham Side Cotham, Bristol BS6 5TP Great Britain

Post Office Address: Same as residence

Inventor's Signature

Date

Full Name of # 5 Joint Inventor: Frederick A Perner

Citizenship: US

Residence: 3234 Ramona St. Palo Alto California 94306

Post Office Address: Same As Residence

Inventor's Signature

Date

Sept 26, 2001

Full Name of # 6 Joint Inventor: Gadriel Seroussi

Citizenship: US

Residence: 1123 Milky Way Cupertino CA 95014

Post Office Address: Same as residence

Inventor's Signature

Date

Full Name of # 7 Joint Inventor: Kenneth K Smith

Citizenship: US

Residence: 11776 W Rader Dr Boise, ID 83713

Post Office Address: Same as residence

Inventor's Signature

Date

Full Name of # 8 Joint Inventor: Stewart R. Wyatt

Citizenship: US

Residence: 10476 Barnsdale Dr Boise, ID 83704

Post Office Address: Same as residence

Inventor's Signature

Date

PATENT APPLICATION

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

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I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

Foreign Application(s) and/or Claim of Foreign Priority

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COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES NO
			YES NO

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (Patented/Granted/Referred)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer
Number Bar Code
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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Direct Telephone Calls To:

Richard P Berg, Reg no 28,145
(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: James Andrew DavisCitizenship: USResidence: 2214 Gralnmill Court Richmond, VA 23233 USAPost Office Address: Same as Residence

Inventor's Signature _____

Date _____

Rev 08/01 (DecPwr)

(Use Page Two For Additional Inventor(s) Signature(s))

Page 1 of 2

**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION (continued)**ATTORNEY DOCKET NO. 10012432 -1Full Name of # 2 joint inventor: Jonathan JedwabCitizenship: GBResidence: Flat 17 Parklands 27 Tynballe Park Road Bristol, England BS8 1PQPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 3 joint inventor: David H. McIntyreCitizenship: USResidence: 13078 W. Woodspring Street Boise, ID 83713Post Office Address: Same as Residence

Inventor's Signature _____

Date _____

Full Name of # 4 joint inventor: Kenneth Graham PatersonCitizenship: GBResidence: 12 Cotham Side Cotham, Bristol BS8 5TP Great BritainPost Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 5 joint inventor: Frederick A PernerCitizenship: USResidence: 3234 Ramona St. Palo Alto California 94306Post Office Address: Same As Residence

Inventor's Signature _____

Date _____

Full Name of # 6 joint inventor: Gadiel SeroussiCitizenship: USResidence: 1123 Milky Way Cupertino CA 95014Post Office Address: Same as residenceInventor's Signature Gadiel SeroussiDate 9/14/2001Full Name of # 7 joint inventor: Kenneth K SmithCitizenship: USResidence: 11776 W Rader Dr Boise, ID 83713Post Office Address: Same as residence

Inventor's Signature _____

Date _____

Full Name of # 8 joint inventor: Stewart R. WyattCitizenship: USResidence: 10476 Barnsdale Dr Boise, ID 83704Post Office Address: Same as residence

Inventor's Signature _____

Date _____

FROM LADAS & PARRY - L.A. 13239340202

(WED) 4. 3' 02 16:02/ST. 15:55/NO. 4800000311 P 22

To: USPD (kl)

Our reference:
B-4257 618971-3

**FROM: COMMISSIONER OF PATENTS
AND TRADEMARKS**
THE PATENT AND TRADEMARK OFFICE
MAIL ROOM STAMP HEREON ACKNOWLEDGES
RECEIPT OF: Check No. 14147 for \$40.00;
Recordation Form Cover Sheet with Certificate of Mailing (2 pages);
Assignment Document (1 page); and this postcard.

Date mailed:
November 8, 2001

IN CONNECTION WITH:
James Andrew DAVIS, et al.

STAMP

**FOR: "ERROR CORRECTION CODING AND
DECODING IN A SOLID-STATE STORAGE DEVICE"**

SERIAL NUMBER: 09/915,194



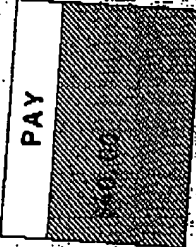
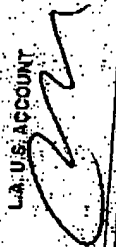
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5670 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90036
(323) 934-2300

COMMISSIONER OF PATENTS AND TRADEMARKS
BOX ASSIGNMENTS
WASHINGTON, D.C. 20231

B-4257 618971-3

James Andrew DAVIS, et al. USPN 09/915,194 Assignment: Recordal Fee		LADAS & PARRY 26 WEST 61ST STREET NEW YORK, N.Y. 10023		NO. 14147	
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Commissioner of Patents & Trademarks		11/8/2001		\$40.00	
Citibank N.A. Citicorp Center 153 E. 53rd St. New York, N.Y. 10043		LADAS & PARRY L.A. U.S. ACCOUNT			

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B-4257 618971-3

Page 1 of 2

m PTO-1595

ev. 6-93)

**RECORDATION FORM COVER SHEET
PATENTS ONLY**

U.S. Department of Commerce

Patent and Trademark Office

the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

Name of conveying party(ies):

Hewlett-Packard Limited
Jonathan Jedwab
Kenneth Graham Paterson

2. Name and address of receiving parties:

Name: Hewlett-Packard Company

Internal Address: _____

Street Address: 3000 Hanover StreetCity: Palo Alto State: CaliforniaZip: 94304 Country: U.S.A.Additional name(s) & address(es) attached? ☐ YES ☒ NOAdditional name(s) of conveying parties attached? ☐ YES ☒ NO

Nature of conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☒ Other Assignment by operation of lawExecution Dates: October 29, 2001

Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No(s): 09/915,194

B. Patent No(s): _____

Additional numbers attached? ☐ YES ☒ NO

Name and address of party to whom correspondence concerning document should be mailed:

Richard P. Berg
ne: LADAS & PARRY

mal Address: _____

et Address: 5670 Wilshire Boulevard, #2100: Los Angeles State: CA Zip: 900366. Total number of application and patents involved: [1]7. Total fee 937 CFR 3.41).....\$ 40.00☒ Enclosed

Any additional fees which may be required are

☒ Authorized to be charged to deposit accountNo. 12-0415

8. Deposit account number: _____

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ross A. Schmitt

Name of Person Signing

Reg. No. 42,529

Signature

November 8, 2001

Date

Total number of pages including cover sheet, attachments, and document: [3] plus \$40 check documents to be recorded with required cover sheet information to:Commissioner of Patents and Trademarks
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Washington, D.C. 20231

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lished by THE BUREAU OF NATIONAL AFFAIRS, INC., Washington, D.C. 20037

E PAGE 2 FOR CERTIFICATE OF MAILING)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first-class mail in an envelope addressed to:

Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231, on November 8, 2001

By: 

Karyn Lao

USSN 09/915;I94
B-4257 618971-3**ASSIGNMENT**

WHEREAS, Hewlett-Packard Limited (an English Company of Bracknell, England) is, by operation of Section 39 of the United Kingdom Patents Act of 1977 relating to employee inventions, a joint first owner of the invention entitled:

Error Correction Coding and Decoding in a Solid-State Storage Device

devised by:

**James A. Davis, Jonathan Jedwab, David H. McIntyre, Kenneth Graham Paterson,
Frederick A. Perner, Gadiel Scroussi and Kenneth K. Smith, Steward R. Wyatt**

NOW, THEREFORE, in accordance with an Agreement between Hewlett-Packard Limited and Hewlett-Packard Company (a Delaware corporation having its principal place of business in Palo Alto, California), Hewlett-Packard Limited hereby perfects the assignment to Hewlett-Packard Company, its successors and assigns, of its share of (a) the right to file and prosecute an application for Letters Patent for the above identified invention in each country worldwide, including, in particular, the Letters Patent for United States Patent Application entitled:

Error Correction Coding and Decoding in a Solid-State Storage Device


and executed by the below named inventors on the indicated dates

executed by Jonathan Jedwab	on 1 October 2001
executed by Kenneth Graham Paterson	on 20 September 2001
executed by _____	on _____
executed by _____	on _____
executed by _____	on _____

and (b) the right to claim any and all priority rights, especially from the first-filed patent or utility model applications, relative to the above-identified invention, as well as (c) the right to obtain Letters Patents in each country and the right, title and interest in such Letters Patents as consistent with the Agreement between Hewlett-Packard Limited and Hewlett-Packard Company.

IN WITNESS WHEREOF, this Assignment is executed by a duly authorized representative of Hewlett-Packard Limited.

By:


Richard A. Lawrence

Title: Senior IP Attorney

Date:

29 Oct 2001

To: USPD (d)

Our reference:
B-4257 618971-3

Date mailed:
November 8, 2001

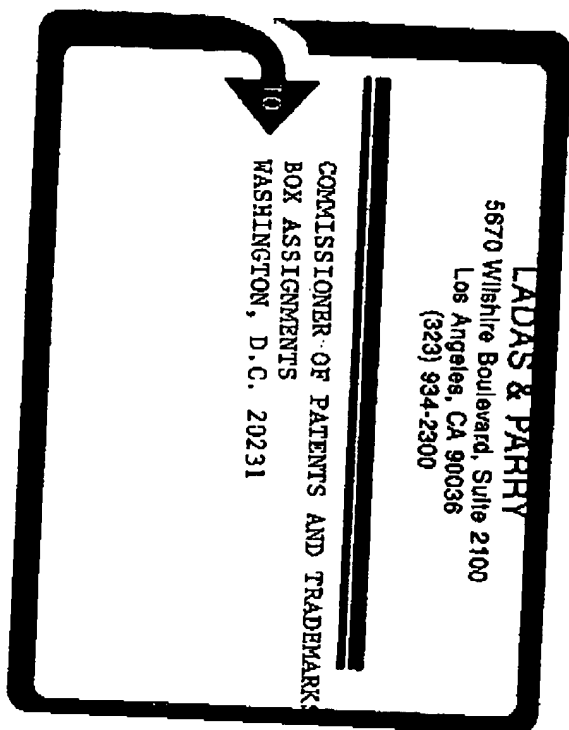
**FROM: COMMISSIONER OF PATENTS
AND TRADEMARKS**
THE PATENT AND TRADEMARK OFFICE
MAIL ROOM STAMP HEREON ACKNOWLEDGES
RECEIPT OF: Check No. 14148 for \$40.00;
Recordation Form Cover Sheet with Certificate of Mailing (2 pages);
Assignment Documents (12 pages); and this postcard.

IN CONNECTION WITH:
James Andrew DAVIS, et al.

STAMP

**FOR: "ERROR CORRECTION CODING AND
DECODING IN A SOLID-STATE STORAGE DEVICE"**

SERIAL NUMBER: 09/915,194



First Class Mail



B-4257 618971-3

James Andrew Davis, Jr. 1900
US\$ 109,780.05
Assessment: Recaptured Tax
PAY TO THE ORDER OF
Commission on Gifts & Transfers
11/8/2005
DATE
11/8/2005
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LADAS & PARRY
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\$109,780.05
AMOUNT
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1101414805 1020000089 400 37933437

B-4257 618971-3

Page 1 of 2

m PTO-1595

RECORDATION FORM COVER SHEET
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Patent and Trademark Office

ev. 6-93)

the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

Name of conveying party(ies):

James Andrew Davis
David H. McIntyre
Kenneth K. Smith
Stewart R. Wyatt
Frederick A. Perner
Gadiel Seroussi

2. Name and address of receiving parties:

Name: Hewlett-Packard Company

Internal Address: _____

Street Address: 3000 Hanover StreetCity: Palo Alto State: CaliforniaZip: 94304 Country: U.S.A.Additional name(s) & address(es) attached? ☐ YES ☒ NOAdditional name(s) of conveying parties attached? ☐ YES ☒ NO

Nature of conveyance:

☒ Assignment ☐ Merger☐ Security Agreement ☐ Change of Name☐ Other _____Execution Date(s) September 27, 2001 by James Andrew Davis
October 23, 2001 by David H. McIntyre
October 18, 2001 by Kenneth K. Smith
October 22, 2001 by Stewart R. Wyatt
September 28, 2001 by Frederick A. Perner
September 14, 2001 by Gadiel Seroussi

Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No(s): 09/915,194

B. Patent No(s): _____

Additional numbers attached? ☐ YES ☒ NO

Name and address of party to whom correspondence concerning document should be mailed:

Richard P. Berg
ne: LADAS & PARRY

Email Address: _____

Mailing Address: 5670 Wilshire Boulevard, #2100City: Los Angeles State: CA Zip: 900366. Total number of application and patents involved: [1]7. Total fee 937 CFR 3.41).....\$ 40.00☒ Enclosed

Any additional fees which may be required are

☒ Authorized to be charged to deposit accountNo. 12-0415

8. Deposit account number: _____

(Attach duplicate copy of this page if paying by deposit account)

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Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Richard P. Berg

Name of Person Signing

Reg. No. 28,145

Signature

November 8, 2001

Date

Total number of pages including cover sheet, attachments, and document: [14] plus \$40 check
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Box Assignments
Washington, D.C. 20231

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Published by THE BUREAU OF NATIONAL AFFAIRS, INC., Washington, D.C. 20037

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Box Assignments
Washington, D.C. 20231, on November 8, 2001

By: _____

Karyn Lao

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272100
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

Error Correction Coding And Decoding In A Solid-State Storage DeviceFiling date: 25 July 2001Application No.: 09/915,194

and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letters Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of said Letters Patent.

I/we additionally authorize HP to file applications in my/our name for Letters Patent in any country, to be held and enjoyed by HP, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, and transfer not been made;

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns, nominees or legal representatives, and I/we agree to communicate to HP, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful oaths and declarations, and generally to do everything possible to aid HP, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HP;

AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to HP, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct HP attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal)

Date Assignment Signed: 27/9/01Inventor's Typed Name: James Andrew DavisDate Application Signed: 27/9/01State of Virginia

) ss.:

County of Richmond

Before me this 27 day of September, 2001, personally appeared James Andrew Davis who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public

My commission expires:

09-30-01

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: David H. McIntyre _____ Date Application Signed: _____State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared David H. McIntyre, who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Frederick A. Perner _____ Date Application Signed: _____State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Frederick A. Perner, who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Gadiel Seroussi _____ Date Application Signed: _____State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Gadiel Seroussi, who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432-1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Kenneth K. Smith _____ Date Application Signed _____State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Kenneth K. Smith who
is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing
instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Stewart R. Wyatt _____ Date Application Signed _____State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Stewart R. Wyatt who
is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing
instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

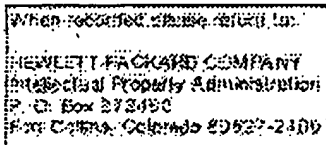
Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: _____ Date Application Signed _____

State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared _____ who
is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing
instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____



PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

David H. McIntyre Date Assignment Signed: 23 October 2001
 Inventor's Signature (Seal)

Inventor's Typed Name: David H. McIntyre Date Application Signed: 23 October 2001

State of Idaho)
 County of Ada) ss.:

Before me this ____ day of _____, personally appeared David H. McIntyre who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires:

 Date Assignment Signed: _____
 Inventor's Signature (Seal)

Inventor's Typed Name: Frederick A. Perner Date Application Signed: _____

State of _____)
 County of _____) ss.:

Before me this ____ day of _____, personally appeared Frederick A. Perner who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires:

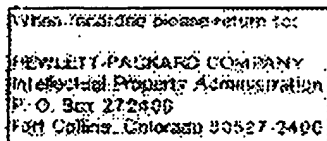
 Date Assignment Signed: _____
 Inventor's Signature (Seal)

Inventor's Typed Name: Gadiel Saroussi Date Application Signed: _____

State of _____)
 County of _____) ss.:

Before me this ____ day of _____, personally appeared Gadiel Saroussi who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires:



PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432-1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

[Signature] Date Assignment Signed: 18 Oct '01
Inventor's Signature (Seal)

Inventor's Typed Name: Kenneth K. Smith Date Application Signed 18 Oct '01

State of Idaho)
County of Ada) ss.:

Before me this _____ day of _____, personally appeared Kenneth K. Smith who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires:

[Signature] Date Assignment Signed: 22 October 2001
Inventor's Signature (Seal)

Inventor's Typed Name: Stewart R. Wyatt Date Application Signed 22 October 2001

State of Idaho)
County of Ada) ss.:

Before me this _____ day of _____, personally appeared Stewart R. Wyatt who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires:

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: _____ Date Application Signed _____

State of _____)
County of _____) ss.:

Before me this _____ day of _____, personally appeared _____ who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires:

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

B-4257 618971-3

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

Filing date: 25 July 2001

Application No.: 09/915,194

and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letters Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor, and any reissues, or reexaminations, or extensions of said Letters Patent.

I/we additionally authorize HP to file applications in my/our name for Letters Patent in any country, to be held and enjoyed by HP, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, and transfer not been made;

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns, nominees or legal representatives, and I/we agree to communicate to HP, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful oaths and declarations, and generally to do everything possible to aid HP, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HP;

AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to HP, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct HP attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: James Andrew Davis _____ Date Application Signed: _____

State of _____)
County of _____) ss.:

Before me this _____ day of _____, personally appeared James Andrew Davis who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: David H. McIntyre _____ Date Application Signed: _____

State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared David H. McIntyre who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

Frederick A. Pernar _____ Date Assignment Signed: Sept 26, 2001
Inventor's Signature (Seal)

Inventor's Typed Name: Frederick A. Pernar _____ Date Application Signed: Sept, 26, 2001

State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Frederick A. Pernar who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Gadiel Seroussi _____ Date Application Signed: _____

State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared Gadiel Seroussi who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 3

Rev 06/01 (Assign)

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 Intellectual Property Administration
 P. O. Box 272400
 Fort Collins, Colorado 80527-2400

PATENT APPLICATION
 ATTORNEY DOCKET NO. 10012432-1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Kenneth K. Smith _____ Date Application Signed _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Kenneth K. Smith who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Stewart R. Wyatt _____ Date Application Signed _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Stewart R. Wyatt who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: _____ Date Application Signed _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared _____ who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____

When recorded please return to:

B-4257 618971-3

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

Error Correction Coding And Decoding In A Solid-State Storage Device

Filing date: 25 July 2001Application No.: 09/915,194

and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letters Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of said Letters Patent.

I/we additionally authorize HP to file applications in my/our name for Letters Patent in any country, to be held and enjoyed by HP, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, and transfer not been made;

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns, nominees or legal representatives, and I/we agree to communicate to HP, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful oaths and declarations, and generally to do everything possible to aid HP, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HP;

AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to HP, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct HP attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: James Andrew Davis _____ Date Application Signed: _____

State of _____)
County of _____) ss.: _____

Before me this _____ day of _____, personally appeared James Andrew Davis who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: _____

When recorded, please return to:
 HEWLETT-PACKARD COMPANY
 Intellectual Property Administration
 P.O. Box 272400
 Fort Collins, Colorado 80527-2400

PATENT APPLICATION
 ATTORNEY DOCKET NO. 10012432 -1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: David H. McIntyre _____ Date Application Signed: _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared David H. McIntyre who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
 My commission expires: _____

Inventor's Signature (Seal) _____ Date Assignment Signed: _____

Inventor's Typed Name: Frederick A. Perner _____ Date Application Signed: _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Frederick A. Perner who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
 My commission expires: _____

Gadriel Seroussi _____ Date Assignment Signed: 9/14/2001
 Inventor's Signature (Seal)

Inventor's Typed Name: Gadriel Seroussi _____ Date Application Signed: 9/14/2001

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Gadriel Seroussi who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
 My commission expires: _____

(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 3

When recorded, please return to:
HEWLETT-PACKARD COMPANY
 Intellectual Property Administration
 P. O. Box 272400
 Fort Collins, Colorado 80527-2400

PATENT APPLICATION
 ATTORNEY DOCKET NO. 10012432-1

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

 Inventor's Signature (Seal) Date Assignment Signed: _____

 Inventor's Typed Name: Kenneth K. Smith Date Application Signed: _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Kenneth K. Smith who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____

 Inventor's Signature (Seal) Date Assignment Signed: _____

 Inventor's Typed Name: Stewart R. Wyatt Date Application Signed: _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared Stewart R. Wyatt who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____

 Inventor's Signature (Seal) Date Assignment Signed: _____

 Inventor's Typed Name: _____ Date Application Signed: _____

State of _____)
) ss.:
 County of _____)

Before me this _____ day of _____, personally appeared _____ who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

 Notary Public
 My commission expires: _____